CLAIM AMENDMENTS

Claims 1-22 (Cancelled).

Claim 23 (Currently amended): A method for ~~continuously~~ determining a glucose concentration in a body fluid with glucose-containing perfusate, the method comprising the steps of:

providing a microdialysis probe, a ~~measurement~~ measuring cell having a sensor, and a control device,

inserting the microdialysis probe into the body fluid,

passing the perfusate having a pre-determined starting content of glucose through the microdialysis probe to obtain a dialysate,

transporting the dialysate to the measuring cell,

obtaining with the sensor measurement signals ~~that correlate~~ from the dialysate, the dialysate serving as an electrolyte and being used to continuously register a measuring current, which correlates with a glucose content of the dialysate in the measuring cell,

~~measuring the measurement signals that correlate with the glucose content of the dialysate,~~

determining from the measurement signals a base line value corresponding to a starting concentration of glucose in the perfusate and the existence of a peak value, the peak value being present when there are differences in concentration between the starting concentration of glucose in the perfusate and the concentration of glucose in the body fluid,

adjusting the starting content of glucose in the perfusate to a glucose content of the body fluid with the control device in accordance with a command variable corresponding with the glucose concentration of the body fluid and being derived from the measurement signals of the measuring cell, ~~and~~

~~determining~~ wherein the glucose concentration in the body fluid is determined by either using a momentary ~~starting~~ content of glucose in the perfusate as a measure for the glucose content of the body fluid when a deviation between the peak value and the base line value is negligible or by determining the glucose content of the body fluid directly from the obtained measurement signals.

Claim 24 (Currently amended): The method of claim 23 wherein a value of the base line signal is a controlled variable and the adjusting step includes determining a momentary ~~starting~~ content of the glucose in the perfusate as a measure for the glucose content of the body fluid when a deviation of a controlled variable from the command variable is negligible.

Claim 25 (Previously added): The method of claim 24 wherein the control device includes an adjuster having an adjusting variable and the adjusting step includes initially determining the starting content of glucose in the perfusate by comparing the adjusting variable with corresponding normalized values of the glucose concentration in the body fluid.

Claim 26 (Previously added): The method of claim 23 wherein the control device includes an adjuster having an adjusting variable and the adjusting step includes initially determining the starting content of glucose in the perfusate by comparing the adjusting variable with corresponding normalized values of the glucose concentration in the body fluid.

Claim 27 (Previously added): The method of claim 23 further comprising the step of measuring the glucose content of the perfusate before it is passed into the microdialysis probe.

Claim 28 (Previously added): The method of claim 24 further comprising the step of measuring the glucose content of the perfusate before it is passed into the microdialysis probe.

Claim 29 (Previously added): The method of claim 26 further comprising the step of measuring the glucose content of the perfusate before it is passed into the microdialysis probe.

Claim 30 (Previously added): The method of claim 23 further comprising the step of flow mixing two perfusion liquids with different glucose concentrations provided in two separate reservoirs to influence the starting content of glucose in the perfusate.

Claim 31 (Previously added): The method of claim 24 further comprising the step of flow mixing two perfusion liquids with different glucose concentrations provided in two separate reservoirs to influence the starting content of glucose in the perfusate.

Claim 32 (Previously added): The method of claim 27 further comprising the step of flow mixing two perfusion liquids with different glucose concentrations provided in two separate reservoirs to influence the starting content of glucose in the perfusate.

Claim 33 (Currently amended): The method of claim 23 wherein the perfusate is passed through the microdialysis probe in alternating ~~successive transport and dialysis~~ intervals at different flow rates, the flow rate during ~~the transport~~ <u>one of the</u> intervals being higher than during ~~the dialysis~~ <u>another of the</u> intervals.

Claim 34 (Currently amended): The method of claim 24 wherein the perfusate is passed through the microdialysis probe in alternating ~~successive transport and dialysis~~ intervals at different flow rates, the flow rate during ~~the transport~~ <u>one of the</u> intervals being higher than during ~~the dialysis~~ <u>another of the</u> intervals.

Claim 35 (Currently amended): The method of claim 27 wherein the perfusate is passed through the microdialysis probe in alternating ~~successive transport and dialysis~~ intervals at different flow rates, the flow rate during ~~the transport~~ <u>one of the</u> intervals being higher than during ~~the dialysis~~ <u>another of the</u> intervals.

Claim 36 (Currently amended): The method of claim 30 wherein the perfusate is passed through the microdialysis in alternating ~~successive transport and dialysis~~ intervals at different flow rates, the flow rate during ~~the transport~~ <u>one of the</u> intervals being higher than during ~~the dialysis~~ <u>another of the</u> intervals.

Claim 37 (Previously added): The method of claim 33 wherein the flow rate during ~~the transport~~ <u>one of the</u> intervals is increased to such an extent that the starting content of glucose in the perfusate during passage through the microdialysis probe remains essentially constant and that during ~~the dialysis~~ <u>another of the</u> intervals the transport is interrupted or at least the flow rate is reduced to such an extent that the glucose concentration of the dialysate approximates the glucose content of the body fluid.

Claim 38 (Previously added): The method of claim 23 wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 39 (Previously added): The method of claim 24 wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 40 (Previously added): The method of claim 27 wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 41 (Previously added): The method of claim 30 wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 42 (Previously added): The method of claim ~~33~~ wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 43 (Previously added): The method of claim 38 wherein the command variable is determined by qualitative detection of signal peaks in the time course of the measurement signals.

Claim 44 (Previously added): The method of claim 33 wherein the command variable is determined by comparing the actual signal curve of the measurement signals with calibrated signal patterns deposited in a storage medium.

Claim 45 (Previously added): The method of claim 38 wherein the command variable is determined by comparing the actual signal curve of the measurement signals with calibrated signal patterns deposited in a storage medium.

Claim 46 (Previously added): The method of claim 33 wherein the command variable is determined from the peak value of the signal time course of the measurement signals during each transport interval.

Claim 47 (Previously added): The method of claim 38 wherein the command variable is determined from the peak value of the signal time course of the measurement signals during each transport interval.

Claim 48 (Currently amended): The method of claim 33 wherein the command variable is determined according to the glucose content c of the body fluid according to the relationship

$$c = \left[\frac{S_g}{S_g \cdot (1-b) + b \cdot S_0} - 1 \right] \cdot a \cdot c_0 + c_0$$

in which S_g denotes a peak value of the measurement signal and S_0 denotes a base line value of the signals measured during a transport interval of the perfusate passing

through the microdialysis probe and c_0 is the momentary ~~starting~~ content of glucose in the perfusate and a, b are empirically determined correction factors compensating for diffusion and mixing and remaining recovery effects during the transport interval.

Claim 49 (Currently amended): The method of claim 38 wherein the command variable is determined according to the glucose content c of the body fluid according to the relationship

$$c = \left[\frac{S_g}{S_g \cdot (1-b) + b \cdot S_0} - 1 \right] \cdot a \cdot c_0 + c_0$$

in which S_g denotes a peak value of the measurement signal and S_0 denotes a base line value of the signals measured during a transport interval of the perfusate passing through the microdialysis probe and c_0 is the momentary ~~starting~~ content of glucose in the perfusate and a, b are empirically determined correction factors compensating for diffusion and mixing and remaining recovery effects during the transport interval.

Claim 50 (Previously amended): The method of claim 23 further comprising a step of regulating discontinuously the starting content of glucose in the perfusate by a two-point control process in which the starting content of glucose in the perfusate is changed by a predetermined adjustment value when there is a control deviation.

Claims 51-67 (Cancelled)

Claim 68 (Currently amended): A method for ~~continuously~~ determining a glucose concentration in a body fluid with glucose-containing perfusate, the method comprising the steps of:

providing a microdialysis probe, a ~~measurement~~ measuring cell having a sensor, and a control device,

inserting the microdialysis probe into the body fluid,

passing the perfusate having a pre-determined starting content of glucose through the microdialysis probe at different flow rates to obtain a dialysate,

transporting the dialysate to the measuring cell,

obtaining with the sensor measurement signals ~~that correlate~~ from the dialysate, the dialysate serving as an electrolyte and being used to continuously register as a

measuring current, which correlates with a glucose content of the dialysate in the measuring cell,

~~measuring the measurement signals that correlate with the glucose content of the dialysate,~~

determining from the measurement signals a base line value corresponding to a starting concentration of glucose in the perfusate and the existence of a peak value, the peak value being present when there are differences in concentration between the starting concentration of glucose in the perfusate and the concentration of glucose in the body fluid, and

adjusting the starting content of glucose in the perfusate to a glucose content of the body fluid with the control device in accordance with a command variable corresponding with the glucose concentration of the body fluid and being derived from the measurement signals of the measuring cell, ~~and~~

~~determining~~ wherein the glucose concentration in the body fluid is determined by either using a momentary ~~starting~~ content of glucose in the perfusate as a measure for the glucose content of the body fluid when a deviation between the peak value and the base line value is negligible or by determining the glucose content of the body fluid directly from the obtained measurement signals.

Claim 69 (Currently amended): The method of claim 68 wherein a value of the base line signal is a controlled variable and the adjusting step includes determining a momentary ~~starting~~ content of the glucose in the perfusate as a measure for the glucose content of the body fluid when a deviation of a controlled variable from the command variable is negligible.

Claim 70 (Previously added): The method of claim 69 wherein the control unit includes an adjuster having an adjusting variable and the adjusting step includes initially determining the starting content of glucose in the perfusate by comparing the adjusting variable with corresponding normalized values of the glucose concentration in the body fluid.

Claim 71 (Previously amended): The method of claim 68 further comprising the step of measuring the glucose content of the perfusate before the perfusate is passed into the microdialysis probe.

Claim 72 (Previously added): The method of claim 68 further comprising the step of flow mixing two perfusion liquids with different glucose concentrations provided in two separate reservoirs to influence the starting content of glucose in the perfusate.

Claim 73 (Previously amended): The method of claim 68 wherein the perfusate flows through the microdialysis probe during transport intervals and dialysis intervals, the flow rate during the transport intervals is greater than the flow rate during the dialysis intervals and is such that the starting content of glucose in the perfusate during passage through the microdialysis probe remains essentially constant and that during the dialysis intervals the transport of the perfusate is interrupted or at least the flow rate is reduced to such an extent that the glucose concentration of the dialysate approximates the glucose content of the body fluid.

Claim 74 (Previously amended): The method of claim 73 wherein the command variable is determined from a peak value of a signal time course of the measurement signals during each transport interval.

Claim 75 (Previously amended): The method of claim 68 wherein the command variable is determined from a peak value of a signal time course of the measurement signals.

Claim 76 (Currently amended): The method of claim 68 wherein the command variable is determined according to the glucose content c of the body fluid according to the relationship

$$c = \left[\frac{S_g}{S_g \cdot (1-b) + b \cdot S_0} - 1\right] \cdot a \cdot c_0 + c_0$$

in which S_g denotes a peak value of the measurement signal and S_0 denotes a base line value of the signals measured during a transport interval of the perfusate passing through the microdialysis probe and c_0 is the momentary ~~starting~~ content of glucose in the perfusate and a, b are empirically determined correction factors compensating for diffusion and mixing and remaining recovery effects during the transport interval.

Claim 77 (Previously amended): The method of claim 68 wherein the command variable is determined by integration or differentiation of a time course of the measurement signals.

Claim 78 (Previously amended): The method of claim 68 wherein the command variable is determined by comparing an actual signal curve of the measurement signals with calibrated signal patterns deposited in a storage medium.

Claim 79 (Previously amended): The method of claim 68 further comprising a step of regulating discontinuously the starting content of glucose in the perfusate by a two-point control process in which the starting content of glucose in the perfusate is changed by a predetermined adjustment value when there is a control deviation.

Claim 80 (Currently added): A method for determining a glucose concentration in a body fluid with glucose-containing perfusate, the method comprising the steps of:

providing a microdialysis probe, a measuring cell having a sensor, and a control device,

inserting the microdialysis probe into the body fluid,

passing the perfusate having a pre-determined starting content of glucose through the microdialysis probe to obtain a dialysate,

transporting the dialysate to the measuring cell,

obtaining with the sensor measurement signals from the dialysate, the dialysate serving as an electrolyte and being used to continuously register a measuring current, which correlates with a glucose content of the dialysate in the measuring cell, and

adjusting the starting content of glucose in the perfusate to a glucose content of the body fluid with the control device in accordance with a command variable corresponding with the glucose concentration of the body fluid and being derived from the measurement signals of the measuring cell, wherein the glucose concentration in the body fluid is determined by either using a momentary content of glucose in the perfusate as a measure for the glucose content of the body fluid or by determining the glucose content of the body fluid directly from the obtained measurement signals.

Claim 81 (Currently added): The method of claim 80 further comprising the step of measuring the glucose content of the perfusate before it is passed into the microdialysis probe.

Claim 82 (Currently added): The method of claim 80 further comprising the step of flow mixing two perfusion liquids with different glucose concentrations provided in two separate reservoirs to influence the starting content of glucose in the perfusate.

Claim 83 (Currently added): The method of claim 80 wherein the perfusate is passed through the microdialysis probe in alternating intervals at different flow rates, the flow rate during one of the intervals being higher than during one of the other intervals.

Claim 84 (Currently added): The method of claim 80 wherein the control device includes an adjuster having an adjusting variable and the adjusting step includes initially determining the starting content of glucose in the perfusate by comparing the adjusting variable with corresponding normalized values of the glucose concentration in the body fluid.

Claim 85 (Currently added): The method of claim 80 wherein the perfusate is passed through the microdialysis probe in alternating intervals at different flow rates, the flow rate during one of the intervals being higher than during another of the intervals.

Claim 86 (Currently added): The method of claim 80 wherein the command variable is determined by integration or differentiation of the time course of the measurement signals.

Claim 87 (Currently added): The method of claim 80 wherein the command variable is determined by comparing the actual signal curve of the measurement signals with calibrated signal patterns deposited in a storage medium.